focal line position and the rear side focal line position, and the 2-dimensional light amount intensity distribution Pxy.

The difference of the positions of the focusing lens 19 at the front side focal line position and at the rear side focal line position corresponds to the astigmatic degree C, and the position of the focusing lens 19 at the rear side focal line position corresponds to the spherical degree S. From the directions a of the slit images, the astigmatic axis can be obtained.

(Step08) Next, the aperture plate 24 is replaced with the aperture plate 23. By replacing with the aperture plate 23, the region is turned to A2 (referring to Fig. 3).

(Step09) For the region A2, which is the region to be measured next, it is judged whether the measurement has been performed or not. If the measurement is not performed yet, it is returned to Step 2, and resetting of the region is carried out. Then, the procedures up to Step08 are performed. As long as there is a region not measured yet, it is returned to Step02, and the procedures up to Step08 are repeatedly performed.

(Step09) It is judged whether the measurements have been completed in all of the regions or not. When the measurements in all regions have been completed, it should proceed to Step 10.

(Step 10) Based on the results of measurements in all regions, the eye's optical characteristic is calculated.

As shown in Step06, the value of Pxy can be obtained from the light amount intensity distribution on the rear

side focal line and the light amount intensity distribution on the front side focal line. The value of Pxy is obtained when the projected light beam passes through the ophthalmo-optical system of the eye 1 under testing twice. Thus, the following relationship exists between the value of Pxy and spread function (PSF) P'xy of the ophthalmo-optical system of the eye 1 under testing:

$$Pxy = (P'xy)^2$$

Therefore, $P'xy = \sqrt{(Pxy)}$. Accordingly, by obtaining Pxy, spread function (PSF), i.e. P'xy, of the ophthalmo-optical system of the eye 1 under testing can be obtained.

As described above, Pxy thus obtained is superimposed and integraled with the index Oxy, which the eye 1 under testing actually sees, as shown in Fig. 8. Then, an image Ixy can be obtained. The image Ixy represents an image of the fundus of the eye under testing, which is obtained when the eye 1 under testing is corrected by a spectacle lens, which combines a spherical lens of refractive power - S diopter with a cylindrical lens of refractive power - diopter.

Here, when a Fourier transform is represented by FT and an inverse Fourier transform is represented by IFT,

$$pxy = FT\ (Pxy)$$

$$oxy = FT\ (Oxy)$$

$$ixy = FT\ (Ixy)$$

Then, from:

$$ixy = pxy \times oxy, \text{ and}$$

$$Ixy = IFT\ (ixy),$$

the image Ixy can be obtained.

Further, the Fourier transform is performed on PSF as described above, and MTF (modulating transfer function) is obtained. When MTF is given for the regions A1, A2, D1 and D2, it is as shown in Fig. 11 (A), Fig. 11 (B), Fig. 11 (C) and Fig. 11 (D) respectively. In Fig. 11, each of the axis of ordinate represents intensity of spectrum (frequency), and it is normalized to 1. Each of the axis of abscissa represents frequency.

In the procedure of Step 11 and after, the results of measurements obtained for each of the regions are displayed. Or, based on the measurement results, calculations are made as necessary, and the results of calculations are displayed.

(Step 11) The status of divided regions of the pupil 18 is displayed, and the regional characteristics (S, C, and Ax) are displayed for each region. The display for each region is superimposed on division status of the pupil 18, or it is shown in form of a table (referring to Fig. 7).

(Step 12) For each of the divided regions, graphics are displayed.

In the graphics on the display, the following data are displayed: PSF (Px, Py) at the front side focal line position and the rear side focal line position (Fig. 5 (A) and Fig. 5 (B)), estimated value of Pxy at correction (Fig. 9), simulated fundus image (Ixy) (Fig. 10).

(Step 13) For each of the divided regions, a graph is displayed.

The graphs on the display are MTP as described above. The graphs shown in Fig. 11 are independently displayed for each region. Or, as shown in Fig. 12, the graphs are